AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of treating a fluorocompound-containing gas stream, the method comprising:

generating a plasma stream from a plasma source gas;

injecting the plasma stream through an aperture into a chamber;

conveying to the plasma stream a source of ions for contacting the plasma stream to form heated ions comprising ions selected from the group consisting of OH^- and H^+; and

conveying the gas stream to the heated ions.

2. (Previously Presented) The method according to claim 1 wherein the plasma source gas comprises an inert ionizable gas.

3. (Previously Presented) The method according to claim 1 wherein the step of generating the plasma stream from a plasma source gas further comprises generating an electric field between two electrodes and conveying the plasma source gas between the electrodes to form the plasma stream.

4. (Previously Presented) The method according to claim 3 wherein one of the electrodes forms at least a part of a wall of the chamber.

5. (Previously Presented) The method according to claim 3 wherein the step of injecting the plasma stream into the chamber further comprises injecting the plasma stream into the chamber through an aperture formed in one of the electrodes.

6. (Previously Presented) The method according to claim 1 wherein the step of conveying to the plasma stream a source of ions occurs prior to the step of injecting the plasma stream through an aperture into the chamber.

7. (Previously Presented) The method according to claim 6 wherein the step of conveying to the plasma stream the source of ions further comprises conveying the source of ions in a stream comprising the plasma source gas.

8. (Previously Presented) The method according to claim 6 wherein the source of ions is conveyed to the plasma stream separately from the plasma source gas.

9. (Previously Presented) The method according to claim 1 wherein the source of ions is conveyed to the chamber.

10. (Previously Presented) The method according to claim 9 wherein the source of ions is conveyed into the chamber separately from the gas stream.

11. (Previously Presented) The method according to claim 1 wherein the gas stream is conveyed directly to the chamber for reacting with the heated ions therein.

12. (Previously Presented) The method according to claim 1 wherein the gas stream is conveyed to the chamber separately from the plasma stream.

13. (Previously Presented) The method according to claim 1 wherein the gas stream is conveyed to the heated ions through the plasma stream.

14. (Previously Presented) The method according to claim 13 wherein the gas stream is conveyed to the plasma stream for injection into the chamber therewith.

15. (Previously Presented) A method of treating a fluorocompound-containing gas stream, the method comprising:

generating a plasma stream from a plasma source gas;

adding the gas stream to the plasma stream;

injecting the plasma stream and gas stream through an aperture into a chamber; and

conveying to the plasma stream a source of ions comprising ions selected from the group consisting of OH^- and H^+.

16. (Previously Presented) The method according to claim 15 wherein the plasma source gas comprises an inert ionizable gas.

17. (Previously Presented) The method according to claim 15 wherein the step of generating the plasma stream from the plasma source gas further comprises generating an electric field between two electrodes and conveying the plasma source gas between the electrodes to form the plasma stream.

18. (Previously Presented) The method according to claim 17 wherein one of the electrodes forms at least a part of a wall of the chamber.

19. (Previously Presented) The method according to claim 17 wherein the step of injecting the plasma stream and gas stream into the chamber further comprises injecting the plasma stream into the chamber through an aperture formed in one of the electrodes.

20. (Previously Presented) The method according to claim 15 wherein the step of conveying to the plasma stream the source of ions occurs prior to the step of injecting the plasma stream and gas stream into the chamber.

21. (Previously Presented) The method according to claim 20 wherein the step of conveying to the plasma stream the source of ions further comprises conveying the source of ions in a gas stream comprising the plasma source gas.

22. (Previously Presented) The method according to claim 20 wherein the source of ions is conveyed to the plasma stream separately from the plasma source gas.

23. (Previously Presented) The method according to claim 15 wherein the source of ions is conveyed to the plasma stream injected into the chamber.

24. (Previously Presented) The method according to claim 15 wherein the source of ions is conveyed to the plasma stream within the gas stream.

25. (Previously Presented) The method according to claim 15 wherein the plasma stream is generated at atmospheric pressure.

26. (Previously Presented) The method according to claim 15 wherein the plasma stream is generated using a dc plasma torch.

27. (Previously Presented) The method according to claim 15 wherein the source of ions comprises water.

28. (Previously Presented) The method according to claim 15 wherein the source of ions comprises an alcohol selected from the group consisting of methanol, ethanol, propanol, propan-2-ol and butanol.

29. (Previously Presented) The method according to claim 15 wherein the source of ions comprises a hydrogen-containing compound selected from the group consisting of hydrogen gas, a hydrocarbon, ammonia, and a paraffin.

30. (Previously Presented) The method according to claim 15 wherein the chamber is at a temperature in the range from ambient to 1200°C.

31. (Previously Presented) The method according to claim 15 wherein the chamber is at ambient temperature.

32. (Previously Presented) The method according to claim 15 wherein the chamber is at a temperature in the range from 400°C to 1000°C.

33. (Previously Presented) The method according to claim 15 wherein the chamber is at a pressure in the range from 10^{-3} mbar to 2000 mbar.

34. (Previously Presented) The method according to claim 15 wherein the step of conveying into the chamber the source of ions further comprises conveying the source of ions over a catalyst.

35. (Previously Presented) The method according to claim 34 wherein the catalyst comprises a metal selected from the group consisting of tungsten, silicon, iron, rhodium and platinum.

36. (Previously Presented) The method according to claim 15 further comprising the step of conveying the gas stream from the chamber to a wet scrubber.

37. (Previously Presented) The method according to claim 15 further comprising the step of conveying the gas stream from the chamber to a reactive media.

38. (Previously Presented) The method according to claim 15 wherein the fluorocompound containing gas stream comprises a perfluorocompound selected from the group consisting of CF_4, C_2F_6, CHF_3, C_3F_8, C_4F_8, NF_3 and SF_6.

39. (Withdrawn) An apparatus for treating a fluorocompound-containing gas stream, the apparatus comprising:

a reaction chamber,

means for generating a plasma stream from a plasma source gas and injecting the plasma stream through an aperture into the chamber;

means for conveying to the plasma stream a source of ions for contacting the plasma stream to form heated ions comprising ions selected from the group consisting of OH^- and H^+; and

means for conveying the gas stream to the heated ions.

40. (Withdrawn) The apparatus according to claim 39 wherein the means for generating a plasma stream comprises means for generating an electric field between two electrodes and means for conveying the plasma source gas between the electrodes to form the plasma stream.

41. (Withdrawn) The apparatus according to claim 40 wherein one of the electrodes forms at least a part of a wall of the chamber.

42. (Withdrawn) The apparatus according to claim 40 wherein the aperture is formed in one of the electrodes.

43. (Withdrawn) The apparatus according to claim 39 wherein the means for conveying the source of ions is arranged to convey the source of ions to the plasma stream prior to the injection of the plasma stream into the chamber.

44. (Withdrawn) The apparatus according to claim 39 wherein the means for conveying the source of ions is arranged to convey the source of ions to the chamber.

45. (Withdrawn) The apparatus according to claim 39 wherein the means for conveying the source of ions to the plasma stream is separate from the means for conveying the gas stream to the ions.

46. (Withdrawn) The apparatus according to claim 39 wherein the means for conveying the gas stream to the heated ions is arranged to convey the gas stream directly to the chamber.

47. (Withdrawn) The apparatus according to claim 39 wherein the means for conveying the gas stream to the heated ions is arranged to convey the gas stream to the chamber through the aperture with the plasma stream.

48. (Withdrawn) An apparatus for treating a fluorocompound-containing gas stream, the apparatus comprising:

a reaction chamber;

means for generating a plasma stream from a plasma source gas;

means for conveying the gas stream to the plasma stream;

means for injecting the plasma stream and gas stream through an aperture into the reaction chamber; and

means for conveying to the plasma stream a source of ions comprising ions selected from the group consisting of OH^- and H^+.

49. (Previously Presented) The method according to claim 2 wherein the inert ionizable gas is selected from the group consisting of nitrogen and argon.

50. (Previously Presented) The method according to claim 15 wherein the plasma stream is generated at a pressure below atmospheric pressure.

51. (Previously Presented) The method according to claim 1 wherein the plasma stream is generated at atmospheric pressure.

52. (Previously Presented) The method according to claim 1 wherein the plasma stream is generated at a pressure below atmospheric pressure.

53. (Previously Presented) The method according to claim 1 wherein the plasma stream is generated using a dc plasma torch.

54. (Previously Presented) The method according to claim 1 wherein the source of ions comprises water.

55. (Previously Presented) The method according to claim 1 wherein the source of ions comprises an alcohol selected from the group consisting of methanol, ethanol, propanol. propan-2-ol and butanol.

56. (Previously Presented) The method according to claim 1 wherein the source of ions comprises a hydrogen-containing compound selected from the group consisting of hydrogen gas, a hydrocarbon, ammonia, and a paraffin.

57. (Previously Presented) The method according to claim 1 wherein the chamber is at a temperature in the range from ambient to 1200°C.

58. (Previously Presented) The method according to claim 1 wherein the chamber is at ambient temperature.

59. (Previously Presented) The method according to claim 1 wherein the chamber is at a temperature in the range from 400°C to 1000°C.

60. (Previously Presented) The method according to claim 1 wherein the chamber is at a pressure in the range from 10-3 mbar to 2000 mbar.

61. (Previously Presented) The method according to claim 1 wherein the step of conveying into the chamber the source of ions further comprises conveying the source of ions over a catalyst.

62. (Previously Presented) The method according to claim 61 wherein the catalyst comprises a metal selected from the group consisting of tungsten, silicon, iron, rhodium and platinum.

63. (Previously Presented) The method according to claim 1 further comprising the step of conveying the gas stream from the chamber to a wet scrubber.

64. (Previously Presented) The method according to claim 1 further comprising the step of conveying the gas stream from the chamber to a reactive media.

65. (Previously Presented) The method according to claim 1 wherein the fluorocompound containing gas stream comprises a perfluorocompound selected from the group consisting of CF_4, C_2F_6, CHF_3, C_3F_8, C_4F_8, NF_3 and SF_6.